

Non-negotiable developer obligations for highly profitable uses: a case study in Portugal

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Abstract

Land value capture policies – that aim at recovering the unearned increments accrued by urban plans or public investments – have been increasingly used by planners and local decision makers – due to shrinking incomes from traditional fiscal sources, on the one hand, and to the need to catch other instruments to fund local infrastructures, on the other. This betterment recovery may be processed either through fiscal instruments (taxes, contributions, or exactions), or through local improvements on the general behalf of communities (namely through infrastructure provision).

Many countries all over the world – namely Brazil, Argentina, Colombia, United States of America, Canada, China, Taiwan, Hong Kong, Singapore, India, United Kingdom, France, Denmark, Poland and other European countries - have implemented indirect value capture instruments, in order to recover the unearned increments straightly linked to public investments, thus supporting new developed or re-developed areas (Gielen and van der Krabben, 2017). These include improvements or impact contributions, special assessments, and urban development charges. These instruments – called developer obligations - consist in requesting developers or real estate promoters the payment - as a setback for certain licensed building levels or land-use regulation decisions by urban plans (that potentially rises the value of their property) - of part of the infrastructure costs associated to a certain urban development undertaking, or provision of certain facilities, construction or other benefits (on a per square meter basis or as a percentage of surface building), in order to compensate the community's social costs for such urban development changes (Bowers, 1992, Webster, 1998). Value capture based on urban plans is flexible, transparent, and accountable, and render urban developments easier. These instruments are generally upwards, arising from policies developed at local grounds and for specific undertakings. Thus, they are more flexible, noticeable and adaptable to communities' preferences, and they don't discourage urban development processes. Non-negotiable developer obligations are enforced through national or regional legislation, and can be implemented through local policies.

Within this framework, the research herein reported presents the theoretical framework, methodology, results and conclusions of a proposal of a kind of non-negotiable development obligation - applied at the Municipal level - aimed at capturing at least part of the land unearned increments engendered by plans (concerning the allocation of concrete building capacities). This work was developed as a research and consultancy work for the Portuguese Territory Department (a governmental organism) within the scope of the revision of the Land Planning Act (Lei 31/2014) and complementary legislation, namely the new Juridical Regime of Urbanization and Edification, and the new Juridical Regime of Territorial Management Instruments.

It founds on an economic-financial assessment that consists in charging landowners/promoters a 20% fee on land betterments that result from the assignment by urban plans of specific building capacities to urban interventions especially targeted to high-profitable tourism uses. The proposed methodology is applied to the Urban Development Plan of the Planning Unit 11 of the municipality of Lagoa, located in the Algarve, Portugal.

A deep reflection has been pursued, and a new paradigm has emerged on the economic and financial sustainability of urban development processes, and technical studies are now being required for plans' approval. Besides, as the current crisis framework strongly impacts on municipal finance, this research aims at contributing to endow municipalities with financing-efficient instruments, able to reinforce their ability to fight for their populations' interests.

These non-negotiable development obligations may be easily applied to other municipalities, within the scope of different kinds of urban plans, thus ensuring that betterments are objectively pointed to cover costs of infrastructure and facilities' provision.

Keywords: Land betterment values; Land taxation; Value capture; Urban development plans; Economic and financial sustainability; Developer obligations

1. Introduction

Land prices rise mainly as a result of public interventions and planning decisions, namely concerning the development and implementation of territorial plans, changes in urban land use or use intensity, or investments in urban infrastructure (Alterman 2010, 2011; Walters, 2012a, 2012b).

Many authors argue that part of this land value that accrue from planning decisions should be captured and applied on behalf of the overall community (Netzer, 1998; Ingram and Hong, 2007; Smolka and D. Amborski, 2007; Rebelo, 2009, 2012).

Within a scope of economic and financial crisis, municipal decision makers increasingly resort to land value capture instruments as means to overcome and balance shrinking revenues proceeding from traditional local taxes (Ingram and Hong, 2007, 2012; Ko and B. Rosenblatt, 2013).

Land value capture may be pursued through taxes, contributions, or regulations (Smolka and Amborski, 2003). The use of fiscal instruments shape urban development (Correia, 1993), as they exert a considerable effect on market performance and land uses, so they influence the achievement of planning goals. Their efficiency may be assessed from their consequences on planning and on urban development funding (DGOTDU, 2011). Taxation of land betterment values ensures public administration an alternative source of income (beyond the traditional taxes), on the one hand, and returns back to the social interest the increases in land values that accrue from public decisions, on the other.

The revision of the territorial planning and urban development legal framework is currently taking place in Portugal. The new Land and Planning Act (Law nº 31/2014) is already enforced, as well as the new Juridical Regime of Urbanization and Edification (DL nº 136/2014), and the new juridical regime of territorial planning instruments (DL nº 80/2015). This revision refer to the general basis of land, territorial ordering and urban development public policies, and became absolutely necessary due to previous urban sprawl, difficult control upon urban land markets, excessive weight of land on housing final costs, and property betterment values that accrued from planning decisions wholly appropriated by landowners. The experience with the previous territorial management system revealed that: instruments hardly fitted new territorial dynamics, their elaboration, revision and execution were extremely dilatory, different rules from different plans were hardly applicable and articulated on specific territories within the scope of territorial development at higher than municipal scale; land occupation was over regulated by master plans and lacked development strategies, and monitoring and assessment of territorial management instruments was scarce.

The main goals of the new Land and Planning Act consist in: urban space containment and rehabilitation, match of regulations together on a single plan, intermunicipal cooperation, more flexibility in territorial planning, assignment of new intervention modes to municipalities, support to economic and financial sustainability in land uses, settlement of equal distribution mechanisms for charges and benefits, oppose urban speculation, the overgrowth of urban perimeters and uncontrolled real estate price rises, regulation over land valuation, and regular assessment and revision of plans and programmes.

The current Law adds an economic and financial regime to previously enforced legislation. It indeed supports land use sustainability through: the anticipation of the economic and financial feasibility of proposed urban operations, settlement of a municipal fund for urban and environmental sustainability fed by the reassignment of betterment values, statement in territorial plans of betterment creation and definition of respective parameters and redistribution criteria, and

compensation for the general social interest in benefits' and charges reassignment. Thus territorial plans should reinforce their strategic character, weigh respective juridical land feasibility, environmental and social cohesion, and economic and financial sustainability, and present as well an estimation of public investments capacities in territorial planning proposals. They should explicitly settle the average land lending for equal distribution, define local economic development goals and municipal intervention measures on land markets, pursue monitoring, and detail execution programs. These attributes should be scrutinised and implemented through detail plans.

As far as the contents of territorial plans and programs are concerned, the new Land and Planning Act requires quantitative and qualitative assessment indicators in plans; as well as the identification of the financial means for different time horizons, execution plans and financial schedules.

In what specifically concerns the economic and financial regime, territorial plans and programs should clearly identify betterment values, and settle objective parameters and assessment criteria. Municipalities should further develop urban developments funding program (that includes the pluri-annual municipal investment program in infrastructure). The urban operations laid down in municipal or intermunicipal plans should ensure infrastructure, equipment and public spaces' execution and funding, and the plan should define the required urban development works and the proportional participation of the different stakeholders in its funding, as well as real estate lending for certain purposes. The redistribution of benefits and charges should consider additional funding for urban rehabilitation and environmental purposes, and warrant equal treatment of benefits and charges that accrue from municipal or intermunicipal plans. They should further consider the creation of a municipal real estate grant to promote the rental market.

The non negotiable developer obligation proposed in this article fits these concerns, as it conveys a new land policy fiscal instrument that enables the capture of at least part of the betterment values engendered through the assignment of concrete building capacities by plans, namely Municipal Master Plans, Urban Development Plans, Detail Plans, parcelling out procedures, or other instruments of territorial management. Indeed this proposal develops an innovative concept and methodology for value capture based on charging for extra development rights beyond average urban built-up areas, and applies this methodology to a detail plan of a Portuguese town. This levied betterment will be afterwards applied to support infrastructure's costs both specific to the urban operation, and on behalf of the general interest of municipality's citizens.

2. Theoretical background

An "unearned increment" represents an increase in land value that may even result from public decisions or from the economic general development, irrespective of landowners' initiatives or investments. The "betterment" corresponds to the part of the "unearned increment" that specifically accrues from public decisions on infrastructure works, or from land use regulations (land use plans or decisions on urban development) (Alterman, 2010, 2011).

The concept of "value capture" is often used to designate a set of land use instruments that enable the capture of betterments that straightly result from land use regulation or public works (Alterman, 2010, 2011). Policies to recover betterments may be implemented either through fiscal mechanisms (namely taxes, contributions, or exactions charged to landowners or developers) or through regulatory instruments (aimed at local improvements, namely provision of more and better infrastructure, facilities or services) (Smolka and Amborski, 2003).

Land value capture has attracted increasing attention by decision makers responsible for local public finance, due both to decrease in incomes accruing from traditional local taxes and to the need to fund local infrastructure through alternative means (Ingram and Hong, 2012). A large number of urban planners (especially in North and in Latin America) have developed and applied economic and financial instruments that enable public bodies to fund infrastructure required by new urban undertakings, namely through capture of land unearned increments, in general, and betterments, in particular (Smolka and Amborski, 2000, 2003). But amongst these planners, a school of thought asserts that new real estate developments should pay for their required infrastructure, according to

their proper anticipated benefits. This goal may be achieved through exactions settled in urban development agreements, which may translate either in impact contributions or in development debits (Smolka and D. Amborski, 2003).

Almost all Latin-American countries have enforced non-negotiable developer obligations - betterments' contribution or special assessments - that enables the public sector to recover betterment strictly related to public investments (Smolka and Amborski, 2003, Rebelo, 2014). The impact fees and development charges have also been largely used in the United States of America – especially in the states of Vermont and Pennsylvania (Daniels, Daniels and Lapping, 1986; Gihring, 1999) - and in Canada from late 1950s (Amborski, 1988; Alshuler & Gómez-Ibañez, 1993; Smolka and Amborski, 2007), and also in Taiwan (Lam and Tsui, 1998), Hong Kong, and Singapore (Hui, Ho, and Ho, 2004; Alterman, 2011), and consist in contributions charged to real estate developers and builders aimed at funding all or part of infrastructure costs associated to new development undertakings. In many circumstances, developers should deliver benefits to the community as a counterweight to certain licensed building levels: an analysis should be assigned to each project, duly explaining the betterment it entails (Calavita and Mallach, 2009). The implementation of non-negotiable development obligations are prescribed by national or regional detailed legislation – such is the case of the “community infrastructure levy” (England), the “tax d’aménagement” (France), “cargas de urbanización, cesiones and reservas de suelo (Spain), “exploitatiebijdrage” (the Netherlands), among other similar instruments (Gielen and van der Krabben, 2017), usually more detailed in land use and zoning local plans.

Value capture based on plans presents a great deal of advantages: transparency and accountability, and faster implementation of urban development processes. This capture may be designed according to plans: in such case the exactions or linkages are computed either as on a per square meter basis, or a percentage of building costs (Calavita and Mallach, 2009).

In China municipalities buy agricultural land and pay for it, then carry on infrastructure works, and sell it afterwards to developers as urban land plots with development licenses. The difference between land urban and agricultural values is guided to the advantage of the municipality: it indeed represents an important share of local income, and it pays for set up infrastructure.

Hong Kong has created its own wealth resorting to a value capture model where its public transports' systems links together with city housing and trade requirements (Foley, 2011). In Hong Kong transport firms use the incomes that accrue from the joint development of housing communities and trade areas around bus stops to fund expensive projects either in transports or in the development of new cities (Ingram and Hong, 2012).

In India a certain number of states has enforced legislation that empowers local governments to levy taxes for infrastructure' improvements, once infrastructure works are finalized (Walters, 2012b).

The United Kingdom has tried to implement improvement taxes in several occasions (Plimmer and McNab, 2008; Booth, 2012; Walters, 2012b). In the first instance, the Land Commission Act of 1967 proposed a tax rate of 40%. In 1975 the Community Land Act reattempted to nationalise land urban development values. Later on, a Development Land Tax of 60% on the increased land value that resulted from a development approval was enforced. In 2006 a Planning Gain Supplement was proposed, but didn't manage to be approved. Latterly – from 2011 on – The United Kingdom started the implementation of a community infrastructure levy, which main goal consisted in recovering infrastructure investment's charges (Booth, 2012; Ingram and Hong, 2012; Walters, 2012b). This tax conveys the evolution of central governments' perspective on land value capture – from the straight levy of betterments till the traded settlement of contributions to support infrastructure's provision (Booth, 2012; Walters, 2012b). Other land value capture instruments are (Calavita and Mallach, 2009): development impact fees; commercial (job-housing) impact fees; inclusionary housing; and density bonuses.

France currently applies a tax - similar to the improvement tax of the United Kingdom - that is levied on new urban development undertakings, and aimed at financing local infrastructure (Ingram and Hong, 2012).

In Denmark a special land development tax was levied before 2004 that required developers to pay about 50% of the betterment that accrued from zoning changes whenever agricultural land was legally transferred into an urban zone (Walters, 2012b).

In Poland changes from agricultural to urban land uses may entail a tax that amounts up to 30% of the betterment when land is sold within a five-year period (Walters, 2012b).

The United States of America use a multiplicity of specific policies that (explicitly or implicitly) include value capture (Ingram and Hong, 2012; Ko and Rosenblatt, 2013), namely: Community Facilities Districts (CFDs), also called Mello-Roos Districts; special taxes; Business Improvement Districts (BIDs); Tax Increment Financing (TIF); Community Benefits Agreements (CBAs); Land Value Tax; and Special Assessment Districts (SAD).

In Latin America have been implemented different land value capture initiatives through improvements' taxes (Walters, 2012b). In the state of São Paulo, in Brazil, is enforced a variant of the improvements' tax: a local governmental agency identifies the amount and type of additional development that will be licensed in a given area, which is then empowered to issue Additional Construction Potential Certificates (usually known as CEPACs), and later on send them through an electronic auction.

In Argentina municipalities can fund certain public works through improvements' contributions that turn into land value increments: governments identify certain categories of beneficiaries and share with them building costs, in the proportion of the estimated benefits (Rezk 2004; Walters, 2012b).

In Colombia improvement taxes – Contribución de Valorización - have been most successfully used to fund improvements in infrastructure (Borrero et al., 2011; Walters, L., 2012b). More recently – considering that the cities that adopt urban development plans raise value through the transformation of previous land agricultural uses into urban land uses – cities are able to capture 30% to 50% of this increase through a tax called Participación en Plusvalías.

The instruments to indirectly capture land values generally arise upwards, from local policies, often specifically developed for specific investments or undertakings (Alterman, 2005, 2011; Spaans, van der Veen, and Janssen Jansen, 2008). They are more flexible because they frequently don't require specific legislation, they overcome more efficiently voters' resistance to new taxes, are easily apprehended by citizens if associated to the charges that a certain development entails to public in general, fund more quickly the public needs, fit better communities' socio-political preferences, and don't discourage urban development processes (Alterman, 2011).

In order to implement a tax on improvements the following administrative conditions are required (Bahl and Wallace, 2008; Walters, 2012b): quantitative assessment of their impacts on land values; identification of beneficiaries; and existence of a public organism and political will to efficiently implement the tax. The implementation difficulties faced by this tax (Booth, 2012; Walters, 2012b) turn up because it is hard: to grasp beforehand how an investment or land use change will affect its value, to clearly point out which properties will be born on and who should pay the tax, and to politically stand up for levies on improvements (Day, 2005; Walters, 2012b).

Land value capture may take place within re-zoning contexts based on (specific or community) plans (Calavita and Mallach, 2009).

To recover a specific investment in infrastructure an accurate estimate of relevant charges is required, as well as the identification of the affected land, followed by the allocation of a proper share of costs to each land parcel. It is supposed that the impact of investments in infrastructure on market values of affected properties is positive, but literature or good practices lack attempts to directly measure this impact (Walters, 2012b). Smolka and Amborski (2000) present an interesting discussion on the relation between the land value unearned increments and investment costs in urban infrastructure.

3. Methodology

The abstract average municipal building capacity/ m^2 is first computed through the quotient between the product of total licensed gross built surfaces¹ (in m^2) assigned to different types of uses and respective occupation and use indexes, weighted by corresponding percentages, and the total municipal surface assigned to urban uses (Figure 1).

Then is computed the concrete building capacity/ m^2 of a certain execution unit or intervention area through the quotient between the product of total licensed gross built surfaces (in m^2) assigned to different kinds of uses and respective occupation and use indexes, weighted by corresponding percentages, and the total surface of the execution unit or intervention area (according to enforced ordering plans).

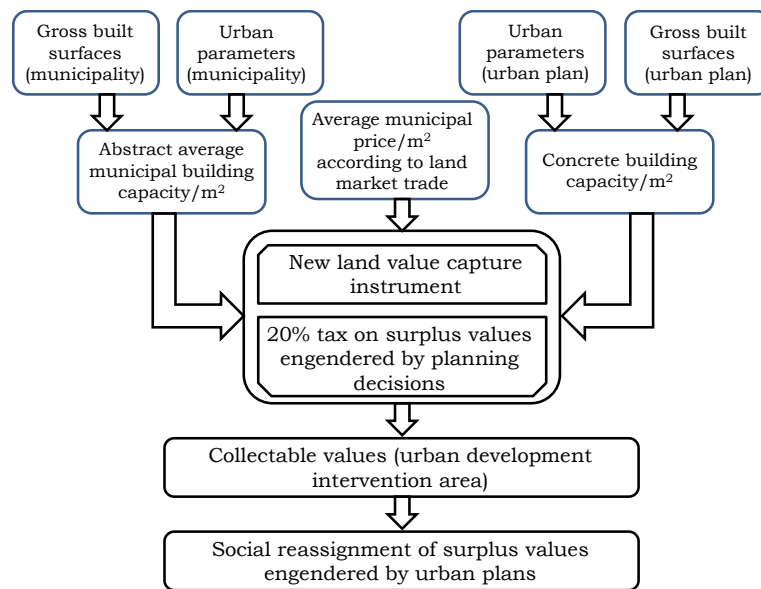


Figure 1. Methodological steps pursued in this research.

The land price/ m^2 according to market trade is estimated by the difference between the municipal price/ m^2 in the municipality under analysis (according to market trade data) net of the average costs/ m^2 with urban infrastructures' execution, maintenance and reinforcement, and the average building costs/ m^2 . An approach to the betterment values/ m^2 is reckoned through the difference between this land price/ m^2 for each kind of use and the corresponding tributary patrimonial value of buildable land according to the enforced Real Estate Municipal Tax Code (IMI, in Portuguese language).

The product between this surplus value/ m^2 and the concrete building capacities of the execution unit or intervention area under analysis for each kind of use, summed up to the whole plots of the urban intervention, for all the anticipated uses, finally gives the estimated total amount of betterment values.

Finally the potential capture of betterment amounts to 20% of the sum total of the previous values. Reflections are pursued concerning the social reassignment of surplus values engendered by the applied urban plans.

4. Case study

¹ According to Urban Development Plans, Detail Plans, or parcelling out procedures.

4.1. The Urban Development Plan of the Planning Unit UP 11 in Lagoa

Lagoa is a Municipality that locates in Faro district (Portugal) (Figure 2). It has a surface of 88,3 km² and holds a population of 22 791 inhabitants. The tertiary sector is responsible for 84,8% of employment in this municipality, slightly higher than the homologous employment in the Algarve region (82,5%), and in continental Portugal (65,3%)(INE, 2011a).



Figure 2. Lagoa Municipality (Algarve) (source: <http://www.google.com>).

In Lagoa Municipality are enforced the Municipal Master Plan of Lagoa²; the Urban Development Plan of the Planning Unit 1 – UP 1 from Ferragudo to Calvário³; the Urban Development Plan of the Touristic Capacity Area of the Planning Unit 12 - UP 12⁴; the Urban Development Plan of the Planning Unit 11 - UP 11⁵; the Urban Development Plan of the Town of Lagoa⁶; the Ordering Plan of the seashore of Burgau-Vilamoura⁷; the Regional Plan of Territorial Ordering PROT - Algarve⁸; the Plan of the Hydrological Basin of the Algarve Streams⁹; the Regional Plan of Forest Ordering (PROF) of Algarve¹⁰; the Natura 2000 Network¹¹; the Partial suspension of the Regional Forest Ordering Plan (PROF) of Algarve¹²; and the Management Plan of the Hydrological Basins that take part in the Hydrological Basin 8 (RH8) – PGBH of the Algarve Streams¹³.

The Municipal Master Plan of Lagoa aims at ordering respective territory to assure a balanced socio-economic development, stating rules for a rational use of spaces, and promoting the management of resources and heritage assets to raise population's quality of life.

The municipal built-up areas locate in the urban developed and developable zones of Lagoa, Estômbar, Porches, Aldeia de Luís Francisco, Ferragudo, Corgos, Bela Vista, Parchal, Mexilhoeira da Carregação, Pateiro, Calvário, Carvoeiro, Poço Partido, Sobral and Torrinha. Their corresponding planning and management operational units - UP 1, UP 2, UP 3, UP 4, UP 8, and UP 9 - may undergo changes.

The surfaces occupied by touristic uses (duly approved by public entities) and the interstitial adjacent areas make up the touristic occupation areas, that are identified in the Municipal Master Plan as planning units UP 7, UP 10, and UP 13.

The identified Touristic Capacity Areas, by their turn, include the Touristic Development Nuclei in the planning and management operational units UP 5, UP 6, UP 11 and UP 12. Until the approval of the Touristic Development Nuclei – assigned to 25% of the Touristic Capacity Areas -, these

² RCM nº 29/94; Aviso nº 26197/2008; Aviso nº 3872/2012

³ RCM nº 126/99; Edital 613/2009

⁴ Declaração nº 56/2008

⁵ Aviso nº 44845/2008

⁶ Aviso nº 11622/2008

⁷ RCM nº 33/99

⁸ RCM nº 102/2007; RCM nº 188/2007

⁹ DR 12/2002

¹⁰ DR nº 17/2006

¹¹ RCM nº 115-A/2008

¹² Portaria nº 78/2013

¹³ RCM nº 16-E/2013

areas should adopt the regime of land use, occupation and transformation stated in the ordering plans, in the restrictions plan, and in the Municipal Master Plan of Lagoa.

According to this Municipal Master Plan, the Touristic Development Nuclei mustn't embrace natural reserves or parks, the touristic developments should be solely targeted to touristic uses (excluding incompatible occupations) and conform to high quality standards, providing leisure facilities, supporting internal and sharing municipal infrastructure's costs. Each Touristic Development Nucleus may embrace several touristic undertakings, served by the same infrastructure's network, whereas the occupied land plots should belong to the same Touristic Capacity Areas.

The Urban Development Plan of the Planning Unit 11 (UP 11) is a Touristic Capacity Area that can embrace one or more Touristic Development Nuclei (NDT). Its intervention area – the whole operational unit – locates between Marinha beach and Cabo Carvoeiro, and takes up 401,6 hectares in the parishes of Lagoa and Carvoeiro, in the municipality of Lagoa. This Urban Development Plan sets land occupation, use and transformation capacities in its intervention area (through corresponding urban parameters) (Figure 3).

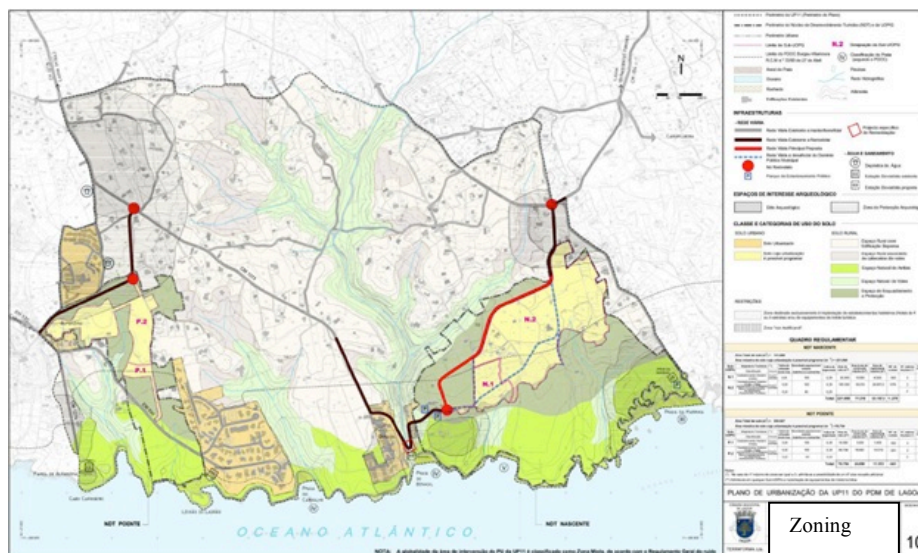


Figure 3. Zoning plan of the planning unit UP 11 (Lagoa) (source: https://mapas.cm-lagoa.pt/docs/UP_11_ZONAMENTO.pdf)

The settled specific goals of the Touristic Capacity Area of UP 11 consist in the implementation – through correspondent execution units - of two Touristic Development Nuclei, East NDT and West NDT. Both should respect the ecological structure, as well as natural and cultural landscape. The total surfaces assigned to both Touristic Development Nuclei (997 737 m²) mustn't exceed 25% of the whole surface of UP 11 settled in the Municipal Master Plan of Lagoa (4 016 158 m²): East NDT has a surface of 741 890 m² and West NDT has a surface to 255 847 m². The intervention area of UP 11 encompasses both urban land (developed land and land which urban development may be programed) and rural land. Developed urban land includes the urban areas outside the Touristic Development Nuclei settled in the Municipal Master Plan: the consolidated urban area of Benagil, the touristic-urban area at Carvalho beach's north (Clube Atlântico), and two touristic-urban areas located near Alfanzina. Their building regime should conform to respective building licences where parcelling out operations are enforced. Land which urban development may be programed includes the new touristic areas inside both East NDT and West NDT, and in all mustn't surpass 30% of the total surface of the Touristic Development Nuclei. The East Touristic Development Nucleus structures into N1 and N2 planning and management operational sub-units; and the West Touristic Development Nucleus structures into P1 and P2 planning and management operational sub-units.

All touristic undertakings in each programmed urban development land Touristic Development Nucleus must conform to four-star or higher category. A maximum of 1 279 beds are assigned to the East Touristic Development Nuclei, whereas a maximum of 441 beds are assigned to the West Touristic Development Nuclei, adding up 1 720 beds.

Only hotels and/or further touristic facilities are allowed in programmed urban development land where the Ordering Plan of the seashore of Burgau-Vilamoura is enforced¹⁴. Land which urban development may be programmed in Touristic Development Nuclei should further observe the building regime of respective planning and management operational sub-units, according to the classifications licensed in touristic undertakings.

4.2. Application of the new land value capture instrument to the Planning Unit 11 in Lagoa

The estimation of the annual average gross built surface in the municipality of Lagoa resorted to statistical data collected for a four-year period, in order to avoid fluctuations of situation. The average gross built surface (for developed and developable urban land) (6) is given by the product between each year's finished buildings¹⁵ (1), the average number of storeys per building (2), the average number of dwellings per storey (3), the average number of compartments per dwelling (4), and the average liveable surface per compartment (5) (m²), divided by 0,65 (as the liveable surface represents around 65% of the gross built surface) (INE, 2009, 2010, 2011b, 2012) (Table 1).

Table 1. Estimation of the annual gross built surface in the Municipality of Lagoa for 2008, 2009, 2010 and 2011, and corresponding annual average value

	2008	2009	2010	2011	Total	Average
Total number of finished buildings (1)	228	137	114	64	543	136
Average number of storeys per building (2)	2,7	2,5	2,4	2,2	9,8	2,5
Average number of dwellings per storey (3)	1,2	1,6	0,7	0,5	4,0	1,0
Average number of compartments per building (4)	4,3	4,4	5,5	5,8	20,0	5,0
Average liveable surface per compartment (m ²) (5)	17,3	17,5	19,8	21,6	76,2	19,0
Total gross built surface (m ²) (6)=(1)x(2)x(3)x(4)x(5)/0,65	82.539,8	64.916,9	32.087,0	13.568,8	193.112	48.278

The average annual costs with infrastructures' execution, maintenance and reinforcement was computed resorting to the data of the municipal amortization and provision maps respecting the assets within the public domain – other construction and urban infrastructure, for 2009, 2010, 2011 and 2012. The average annual investment amounted to 34 044 069 € (Câmara Municipal de Lagoa, 2009, 2010, 2011, 2012), thus it leads to an estimation of 705,2 €/m² average annual infrastructure costs (Table 2).

Table 2. Average investment/m² in urban infrastructures' execution, maintenance and reinforcement in Lagoa Municipality.

Investments in urban infrastructures' execution, maintenance and reinforcement	2009	2010	2011	2012
Annual amortization of urban infrastructure (€)	26.399.063	31.439.028	36.570.644	41.767.542
Annual average investment (€)	34.044.069			
Annual average gross built surface (m ²)	48.278			
Infrastructure's cost (€/m ²)	705,2			

For each year, the transaction value/m² (€/m²) in Lagoa Municipality (3) is computed through the quotient between the value of land property transactions (1) (INE, 2009, 2010, 2011b, 2012) and the

¹⁴ Except in the “*nonaedificandi*” area depicted in the zoning plan in the East NDT (where buildings are forbidden).

¹⁵ It corresponds to the sum of new buildings, and buildings' enlargement, changes and/or reconstruction.

total gross built surface (2) (Table 3). Buildable land price per m² according to market trade (6) is given by the difference between the transaction value/m² (3) and the average construction costs/m² ¹⁶ (4) and the average urban infrastructures' execution, maintenance and reinforcement costs/m² (5).

Table 3. Price of buildable land/m² in the municipality of Lagoa, in 2008, 2009, 2010 and 2011

	2008	2009	2010	2011
Total value of town property trade (€) (1)	101.687.923	92.541.438	93.778.000	103.169.000
Gross built surface (m ²) (2)	82.539,8	64.916,9	32.087,0	13.568,8
Transaction value/m ² (€/m ²) (3)=(1)/(2)	1.232,0	1.425,5	2.922,6	7.603,4
Construction costs/m ² (4)	482,4			
Urban infrastructure costs/m ² (5)	705,2			
Price of buildable land/m ² of construction (€/m ²) (6)=(3)-(4)-(5)	44,4	237,9	1.735,0	6.415,8

The average municipal land price of buildable land/m² based on town property trade is computed through the sum of the different land prices/m² for each planning and management sub-operational unit and for each type of use within the Planning Unit 11, assuming that respective contribution for this price is proportional to the licensed gross built surface for profitable uses. So the gross built surface assigned to profitable uses (m²) was identified in each area of Lagoa Municipality (where apply different planning instruments and urban parameters). The product between the price of buildable land/m² and respective net land use index/m² of land was next computed. The share of each area in the average land price/m² each year is given by the product of the previous value and respective percentage in relation to the maximum gross built surface licensed in the total urban developed and developable municipal areas. These parcels are, then, summed up for all the areas, each year, what leads to 721,9 euros/m² for municipal land price, on average, per year.

The application of the parameters and formula settled in the Real Estate Municipal Tax Code in each area within Lagoa Municipality lead to an average annual tributary patrimonial value of 56,1 euros/m² of buildable land (based on corresponding values for 2008, 2009, 2010 and 2011).

The betterment values ascribable to each planning and management operational sub-unit and to each kind of land touristic profitable use was, then, reckoned through the product between the homologous licensed gross build surface and the difference between the annual land price/m² based on market trade (721,9 €/m²) and the corresponding price based on the application of the Real Estate Municipal Tax Code to Lagoa municipality (56,1 €/m²) (Table 4). The proposed 20% tax aimed at social purposes is, then, applied to the intervention area of this Development Plan, thus the potential collectable value amounts to 12 764 718 €, what represents 37,5% of the annual municipal average investment in urban infrastructures.

Table 4. Average betterment and corresponding 20% tax on these surplus values for all the planning and management operational sub-units and respective profitable touristic uses in the Planning Unit 11 of Lagoa.

¹⁶ These costs are issued in the governmental orders that render applicable the article 39th of the Real Estate Municipal Tax Code enforced in 2008, 2009, 2010 and 2011 (Portaria nº 16-A/2008; Portaria nº 1545/2008; Portaria nº 1456/2009; and Portaria nº 1330/2010, respectively).

Touristic undertakings			Land surface (m ²)	Gross built surface (m ²) [1]	Betterments (€) [2]=[1]*665,8	20% of betterments (€) [3]=0,2x[2]
Planning and management operational sub-units		Classification				
Planning and management operational sub-unit East NDT	N.1	Lodging establishments (Hotels)	30.000	15.000	9.987.000	1.997.400
	N.2	Lodging establishmentso (Hotels, Serviced Flats or Inns)	191.050	56.210	37.424.618	7.484.924
		Lodging complementary means (Holiday Villages)				
	Total (East NDT)			221.050	71.510	47.411.618
Planning and management operational sub-unit West NDT	P.1	Lodging establishments (Hotels)	10.000	5.000	3.329.000	665.800
	P.2	Lodging establishmentso (Hotels, Serviced Flats or Inns)	66.754	19.650	13.082.970	2.616.594
		Lodging complementary means (Holiday Villages)				
	Total (West NDT)			76.754	24.650	16.411.970
Total values in the Planning Unit 11 UP 11			297.804	95.860	63.823.588	12.764.718

5. Conclusions and final reflections

It is expected that this article somehow contributes to the debate towards international comparative research on developer obligations. This contribution fits five important perspectives

First of all, it presents the legislative basis of the recently approved Portuguese Law on land, territorial ordering and urban development policy, that frames a set of legal principles required so that landowners and other public and/or private stakeholders can develop their lands. This law remmits, however, to more territorially specific plans, where the design and implementation of non-negotiable developer obligations of strong financial character are presented in more detail. It still leaves way for this kind of instrument to fit landowners' ou developers' interests, settled on a more case-by-case tradable way, thus not resulting from a normative unilateral decision, but instead gathering greater support from all the parts involved (including the proper population).

Secondly, the legitimation basis for the instrument proposed in this article may, also, found on local development policies and strategies, thus focusing in the capacities that tourism high quality activities bring to the referred municipality and to its economic and financial sustainability. Within this scope, detail plans can specify the amounts that should be collected through this non-negotiable developer obligation to cover at least part of infrastructure costs (possibly extending to other social concerns such as social housing). This instrument can also be used complementary with binding land lending, already supposedly settled in detail plans.

Thirdly, this article and the proposed instrument also stress the role that negotiable developer obligations pursue in municipal financial health, pointing out an important contribution to the municipal budget, complementing other funding traditional sources such as taxes (increasingly difficult to support in economic and in political grounds). They are framed into the rationale – that underlies the current legislation – that stands for a new paradigm of municipal economic and financial sustainability. This non-negotiable developer obligation has, thus, the public purpose to contribute to build the infrastructure required by the touristic operation, and to keep and reinforce the already existent infrastructure in more traditional settlements within the municipality. So a logic or nexus exists that relates the non-negotiable developer obligation to subsequent improvements in urban infrastructure levels, promoting the overall population's quality of life. A deep reflection has been devoted to the economic and financial sustainability of urban development, and the new legislation recommends the development of technical studies as a pre-requisite to support the approval of plans. In this sense, the proper plan should assure that the collected levies won't be used for any other purposes that the initially settled in plans. The proposed instrument is based on the application of a proportionality model (more fair and equitative, as it prevents an unbalanced or

arbitrary treatment of developers in relation to one another), applied to 20% of the value corresponding to the building capacity settled through urban parameters in applicable territorial plans.

Finally, this proposal fits the current debate on the 'incidence' of developer obligations, as far as it raises the question on when is the right moment to apply this instrument. In this case it is proposed that this non-negotiable developer obligation should be applied before the urban development, but the existence of a negotiation margin can still assure the definition of distinct application moments, according to construction and transaction steps, always after a clear definition of urban indexes in plans. Considering this is but a proposal, only its practical application will support the monitoring of developers' behaviours once dealing with distinct moments of obligations' collection.

Through the objective quantification of the concrete betterments that derive from urban operations and from municipal planning decisions this new developer obligation, thus, supports the reinforcement of municipal finance and subsequent economic and financial sustainability, the clarification of the origins and applications of funds that accrue from urban development, and the allocation of these surplus values for the population's general social interest and not for private-oriented specific interests. It seeks, above all, a fair equity among the whole population living in a certain Municipality, in what concerns the distribution of costs and benefits that accrue from urban development operations, thus releasing most citizens from fiscal overburdens, as well as from increases in building costs (Hong, 1998; Smolka and D. Amborski, 2003).

This new territorial management tool takes on a general character, and can be further applied to other municipalities and intervention areas of Municipal Master Plans, Urban Development Plans or Detail Plans, as it grounds on data and methodologies that support inter-municipal comparisons.

To sum up, it can be concluded that this new instrument will substantially support the urban development and enhance populations' quality of life.

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